Technical Disclosure Commons

Defensive Publications Series

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LASER-ETCHED WATCH HANDS

HP INC

Laser-Etched Watch Hands

Abstract: An analog watch uses lighting which illuminates in the shape of a watch hand to replace or augment physical hands of a watch. Each hand is a thin transparent glass plate with a laser-etched three-dimensional image of the watch hand which diffuses light from a light source in the watch to make to the hand visible.

This disclosure relates to the field of timepieces.

A technique is disclosed that uses lighting which illuminates in the shape of a watch hand to replace the physical watch hand of an analog watch.

Up to now, analog watches have used physical watch hands which are controlled by the watch movement to indicate time.

According to the present disclosure, and as understood with reference to the Figure, each illuminated watch hand 10 is constructed using a thin transparent glass plate 20 with a laser-etched three-dimensional image of the watch hand 10. The glass plate 20 is edge-lit by a colored LED 30, which doesn't obscure the transparency except where the watch hand 10 is etched. Light is diffused by the etching, making the light visible to the user where the watch hand 10 is etched.

To enhance visibility in lighted environments, a metallic watch hand overlay 40 can be adhered to the transparent plate 20 over the laser etching, the metallic hand overlay 40 having a cutout to reveal the laser etching below.

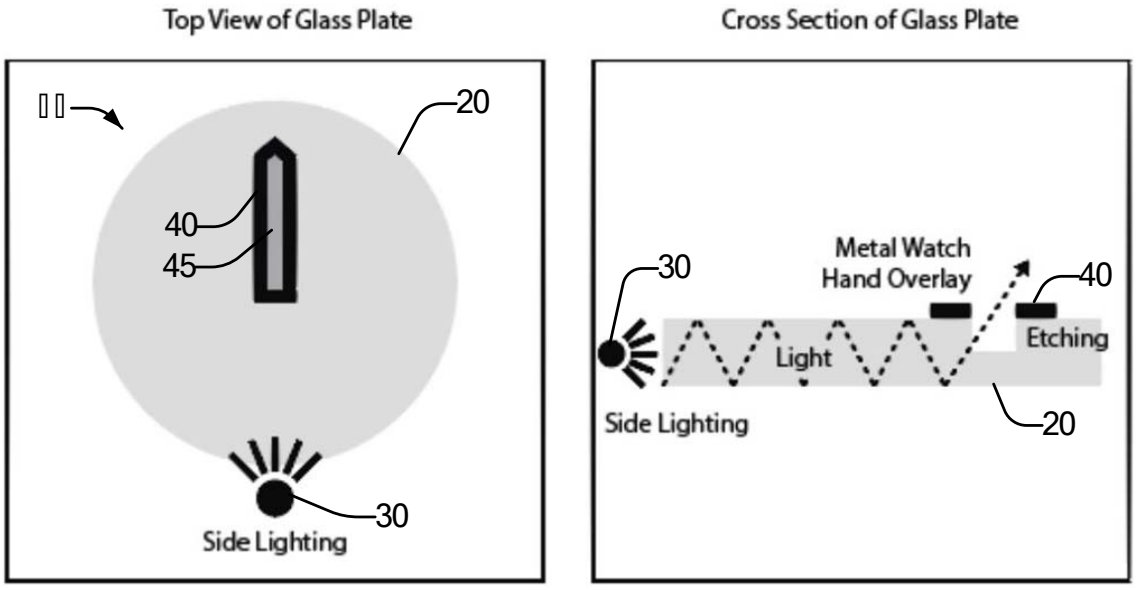
Multiple watch hands 10 are created by stacking multiple watch hand plates 20, where each watch hand plate 20 is etched with one hand and edge lit by a LED 30 mounted independently, for example on the bezel of the watch. Each hand 10 is turned by either a spindle or a small ratcheting motor located on the outside of each plate.

In addition, in a smart watch that includes logic executing in a processor, a multi-colored RGB LED 30 allows the etching on the hands 10 to illuminate with different colors depending on the context, time of day, specific information being conveyed to the user (e.g., email or text notifications from the smart watch), or other conditions.

Such watch hands 10 can be used as the primary watch hands, or as the hands used in a sub-dial of a watch.

The disclosed technique advantageously uses lighting to create a watch hand that give a unique and visually appealing effect compared to a physical watch hand.

Disclosed by Brian Spate, Shawn Ric Piper, Michael W. Hu, and Juli Unger, HP Inc.


Top View of Glass Plate
20
40
45
30
Side Lighting
Cross Section of Glass Plate
30
Metal Watch
Hand Overlay
40
Etching
Light
Side Lighting
20